Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for coating a substrate with an inorganic-organic hybrid polymer material ~~using the Dielectric Barrier Discharge (DBD) technique~~, said method comprising the steps of:

a) introducing a sample in the space between two electrodes,

b) controlling the atmosphere between the electrodes,

c) generating a plasma discharge between the electrodes,

d) mixing aerosols containing hybrid organic/inorganic cross-linked pre-polymers formed via sol-gel processing, into the plasma discharge, wherein said plasma is generated by a Dielectric Barrier Discharge (DBD) technique.

2. (Previously Presented) A method as claimed in claim 1, wherein one or more of the following additional components are added to the plasma discharge: gases, vapors, aerosols or powders of non cross-linked precursor chemicals.

3 (Previously Presented) A method as claimed in claim 1, wherein the aerosol in step d) comprises a compositional gradient of the pre-polymers and/or any additional admixed components.

4 (Previously Presented) A method as claimed in claim 1, wherein the plasma is maintained at a pressure from about 100Pa to about 1MPa.

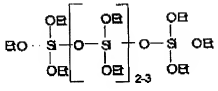
5. (Previously Presented) A method as claimed in claim 1, wherein the plasma is generated by alternating voltage between the electrodes of a frequency from about 10Hz to about 50MHz.

6 (Previously Presented) A method as claimed in claim 1, wherein the substrate comprises plastic, non-woven or woven fibers, natural, synthetic or semi-synthetic fibers, cellulosic material, metal, ceramic, powder or any composite structure thereof.

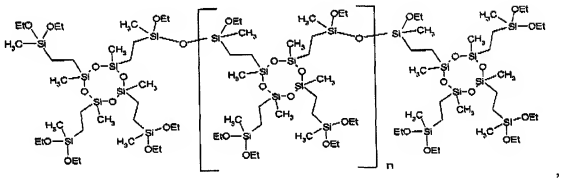
7 (Previously Presented) A method as claimed in claim 1, wherein the hybrid inorganic-organic coating increases, decreases and/or controls one or more of the following physical properties compared to the uncoated substrate: hydrophilic, hydrophobic, oleophilic, oleophobic, adhesive, release, gas diffusion barrier, liquid diffusion barrier, solids diffusion barrier, chemical resistance, UV resistance, thermal resistance, flame retardancy, porosity, conductivity, optical, self cleaning, acoustic, roughness, wear resistance, scratch resistance, lubricating, antimicrobial, biocompatible, sensory, catalytic properties, humidity, drug release, softness to touch, taste, smell, insect repelling properties, allergic reaction, toxicity, acid-base level.

8 (Cancelled)

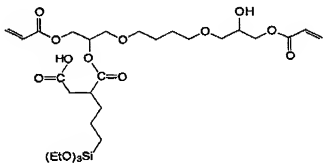
9. (Previously presented) A method as claimed in claim 1, wherein the inorganic-organic hybrid pre-polymer is obtained and/or obtainable from one or more of: Tetramethoxysilane; Tetraethoxysilane; Zirconium-tetrapropoxide; Aluminium-tributoxide Titanium-tetraethoxide; Aluminium-dibutoxide ethylacetoacetate; Zirkonium-tripropoxide methylacrylate; Propyltrimethoxysilane; ;Phenyltrimethoxysilane; Diphenyldimethoxysilane; Mercaptopropyltrimethoxy-silane; Tridecafluoro-triethoxysilane; Aminopropyltriethoxy-silane; Trimethylammonium-propyltrimethoxysilane; Octadecyldimethylammonium-propyltrimethoxysilane; Vinylbenzyl ammoniumethyl aminopropyltrimethoxysilane; Succinic acid anhydride propyl triethoxysilane; Glycidoxypropyl-trimethoxysilane; Vinyltrimethoxy-silane; Methacryloxypropyl-trimethoxysilane; TPGDA-silane; TEGDA-silane; BPADA-silane; GDMA-silane and/or; PETA-silane, silylated polymers, a compound defined by the formula



a compound defined by the formula:



a compound defined by the formula:



and/or suitable mixtures thereof.

10 (Previously Presented) A method as claimed in claim 1, where the pre-polymer mixture in step d) further comprises

- inorganic coating forming materials preferably selected from: colloidal metals, metal oxides, organometallic compounds and/or

- organic coating forming materials; preferably selected from: carboxylates, (meth)acrylates, styrenes, methacrylonitriles, alkenes and/or dienes, (meth)acrylic acid, fumaric acid (and esters), itaconic acid (and esters), maleic anhydride, halogenated alkenes, (metha)acrylonitrile, ethylene, propylene, allyl amine, vinylidene halides, butadienes, (meth)acrylamide, epoxy compounds, styrene oxide, butadiene monoxide, ethyleneglycol diglycidylether, glycidyl methacrylate, bisphenol A diglycidylether (and its oligomers), vinylcyclohexene oxide and phosphorus-containing compounds and/or any suitable mixtures thereof.

11. (Previously Presented) A method as claimed in claim 1, wherein the inorganic-organic hybrid coating is obtained and/or obtainable by mixing separately in addition to the aerosol in step d) one or more additional gases, vapours, aerosols or powders of the following compounds to the plasma discharge: Ar, He, O_2, N_2, CO_2, CO, SF_6, NO, NO_2, N_2 O, H_2, methane, ethane, propane, butane, ethylene, propylene, ethylene oxide, propylene oxide, acetylene, CF_4, C_2F_6, C_2F_4, H_2O and/or inorganic coating forming materials selected from: carboxylates, (meth)acrylates, styrenes, methacrylonitriles, alkenes and/or dienes, (meth)acrylic acid, fumaric acid (and esters), itaconic acid (and esters), maleic anhydride, halogenated alkenes, (metha)acrylonitrile, ethylene, propylene, allyl amine, vinylidene halides, butadienes, (meth)acrylamide, epoxy compounds, styrene oxide, butadiene monoxide, ethyleneglycol diglycidylether, glycidyl methacrylate, bisphenol A diglycidylether (and its oligomers), vinylcyclohexene oxide and phosphorus-containing compounds and/or any suitable mixtures thereof.

12. (Previously Presented) A method as claimed in claim 1, wherein the coating is applied as a liquid precursor.

13. (Previously Presented) A method as claimed in claim 1, wherein the substrate which is coated is selected from: a powder, wire and a moving material web.

14. (Withdrawn) A coated substrate obtained and/or obtainable by a method as claimed in claim 1.

15. (Withdrawn) An apparatus for generating and maintaining a plasma for use in a method as claimed in claim 1; the apparatus comprising a pair of electrodes, a gap being present between said electrodes, and a voltage generator for applying a voltage between said electrodes, said electrodes comprising an electrically conducting material, wherein one or both electrodes are covered with an electrically insulating material, and wherein the generator is capable of generating an alternating voltage a frequency from about 10Hz to about 50 MHz.

16. (Withdrawn) The apparatus according to claim 15, wherein said electrodes have the form of planar or curved plates or grids, bars, cylinders, or knife or brush type geometries.

17. (Withdrawn) The apparatus according to claim 15, wherein one or both of said electrodes is segmented in different parts of any shape.

18. (Withdrawn) The apparatus according to claim 15, comprising a parallel and/or serial combination of one or more of said electrodes.

19. (Withdrawn) The apparatus according to claim 15, wherein one or both electrodes are temperature controlled.

20. (Withdrawn) The apparatus according to claim 15, wherein one or both of the electrodes is movable.